

MANITOBA

Where East Meets West

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REGIONAL STUDIES OF CANADA

MANITOBA

Where East Meets West

Doreen Margaret Tomkins

with George S. Tomkins

and Neville V. Scarfe

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The first view of the prairies — a breathtaking experience

The first sight of the prairies is always an exciting event — rather like a first view of the ocean. In some places the land is so flat that it is possible to see for about eight miles. The rows of telegraph poles along the straight prairie roads become smaller and smaller, until finally they can no longer be seen in the far distance. Buildings and trees appear insignificant in this vast open space. In every direction the straight, level line of the horizon appears to divide the land from the sky. The type of vegetation, the weather, the cities, and the farms together give the prairies a distinct character, quite different from any other part of Canada.

Henry Kelsey was the first white man to see the Canadian prairies. He worked for the Hudson's Bay Company and became the Governor of York Factory on Hudson Bay. In 1690 he left the trading post and started his journey inland. He was looking for Indians and hoped to persuade them to trade their furs at the Hudson's Bay post then being built at Churchill. Here is how he described his journey, shown in Figure 6-18.

Distant from hence by Judgement at ye best
From ye house* 600 miles southwest
Through rivers wch runs strong with falls
Thirty-three carriages,** five lakes in all.

Was his estimate of the distance and direction of his journey correct? What kind of country did he pass through? In which major natural region of Canada was he travelling? His journey took many months. Imagine his wonder and amazement when he left well-watered forest and rock country and found himself looking at buffalo herds grazing on the dry grassy plains of Eastern Saskatchewan.

Unlike Henry Kelsey, modern travellers know what to expect when they reach the heart of our continent. But they are still impressed when they first see this great natural region for themselves. Here is how one traveller described the sudden change from Shield to Prairie country:†

The rocks of the Shield sink lower and lower until, just a few miles east of the little Manitoba town of Whitemouth, they disappear and the prairie stretches out in front. The road becomes straight as a die. . . . Farms appear. A door opens into another world.

And now a thousand miles of farm-land, straight prairie roads, farm-houses behind their poplar windbreaks††. . . — little towns at intervals, and everywhere the grain elevator. . . .

*York Factory.

**Portages around rapids and waterfalls.

†Rows of trees planted by men to provide shelter from the wind.

††Quoted from *Unconventional Voyages*, by A. R. M. Lower, Toronto, The Ryerson Press, 1953, page 143.

A prairie scene in Southern Manitoba — Figure 6-1

1. Compare this scene with the description above. Why did the writer mention farms and farmland several times in his description? What proportion of the land shown is under cultivation? Why does this impress one who has been travelling in the Canadian Shield for some time?

2. Which letters identify a straight prairie road, a farmhouse behind a windbreak, grain elevators?

3. Which of the following words and phrases describe these fields well —

very large
covered with dark colored soil
hummocky
rocky
regular, straight-sided shapes
very sandy
small and irregularly shaped
suitable for the use of machinery
useful for rough pasture only
very flat

Use the words and phrases you have chosen and write a sentence or two describing this farmland.

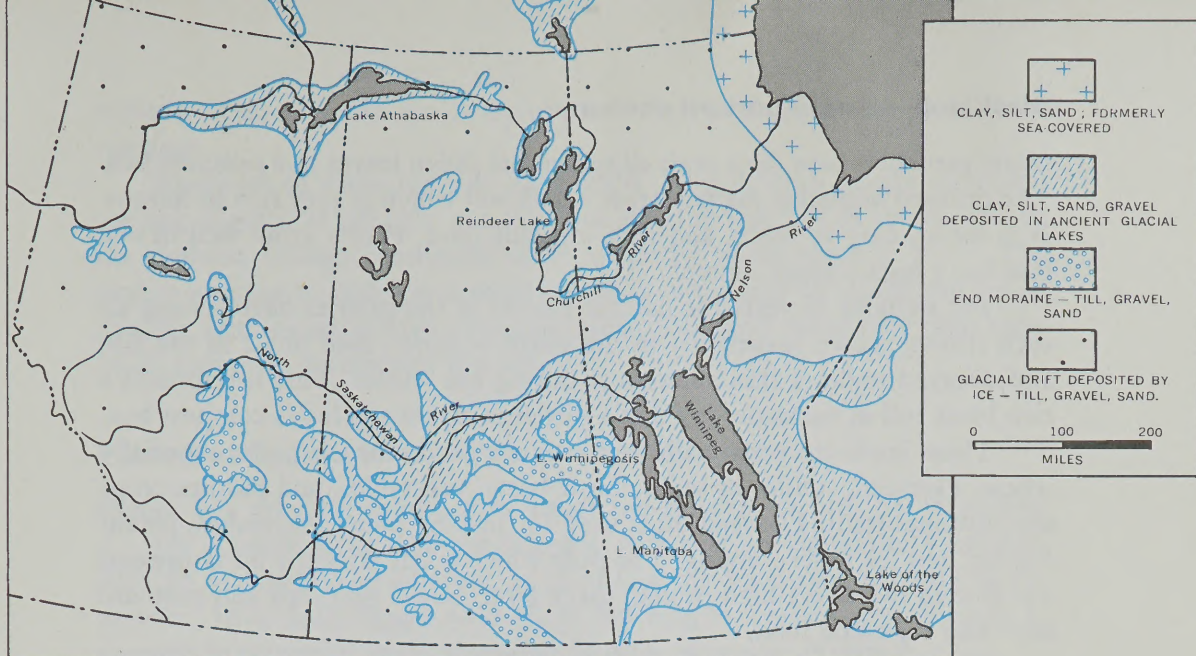
We shall discover that there are many kinds of landscape in the country that we call “prairie.” In the rich farmlands of Southern Manitoba, we see many features that are common throughout the prairies, but local conditions have given this region its own special character.

The Legacy of an Ice Age

Almost all the land in the Prairie Provinces was once covered by a great ice sheet. When the ice melted, huge quantities of meltwater were released, and the mud, sand, and gravel which the ice had carried was deposited on the land surface.

In some places, for example the Pembina Valley, the flatness of the prairie is interrupted by huge valleys occupied by small streams which could never have carved them. Suggest how they were formed.

It was impossible for all the meltwater to drain away immediately and vast areas were covered by shallow lakes. For thousands of years these waters have been gradually draining and leaving behind large areas of silt and mud. Figure 6-2 shows the extent of these deposits. How much of Southern Manitoba was covered by ancient lakes? Lakes Winnipeg, Winnipegosis, and



6-2. The Prairie Provinces are covered by material left behind by the ice.

Manitoba are the remains of these former lakes. They are still surrounded by huge areas of marsh where the land has not yet drained sufficiently to be used for farmland. The lands formed by these deposits are very flat and free from stones. Why is this an advantage for the farmer? How many pieces of machinery are working in the field shown in Figure 6-3?

6-3. Harvesting field crops in Southern Manitoba (Manitoba Department of Industry and Commerce).



Black soil — an important resource

Many gardeners save their lawn clippings and fallen leaves in a compost box. The decayed vegetable matter forms a dark soil which is very rich in humus. It is moist, easy to work, and rich in plant food. Plants grow well in soil that has a high humus content.

For millions of years the natural grasses of the prairies have sprung up each spring, grown luxuriantly in the warm summer, died down in the fall, and decayed under a thin snowcover during the winter. This has formed a rich black soil in the same way that a gardener makes soil in his compost box.

These lands are very fertile and produce good crops of grain, especially wheat. Flaxseed, sunflower seeds, sugar beets, vegetables, and pasture crops are also important. Flaxseed oil is used for making paints, varnishes, patent leather, and for waterproofing. The pulp which is left after the oil is pressed out is used to make a high protein cattle food. Sugar beet tops and pulp are also used for cattle food.

These farmlands are some of the richest in Canada and many farms specialize in producing seed grain, in fattening cattle, or in special crops such as sunflowers. Though wheat is still the chief cash crop, the trend to mixed farming is increasing. Why is mixed farming better for the farmers? Why is it better for the soil? Where is produce from the dairy herds, hogs, poultry, and market gardens easily marketed?

The climate of the Prairies — a dramatic feature

Most people, whether they have been there or not, have some ideas about what the prairie climate is like. Older people talk of drought, of years when the sun shone ceaselessly and almost no rain fell. The crops withered and the soil itself blew away in great clouds of dust. These were years of great hardship, and they will never be forgotten by those who struggled to live through them.

Winter cold is a well known feature of the prairie climate. Temperatures drop so low that cars must be equipped with snow tires, strong antifreeze, winter oil, heavy duty batteries, block heaters, and interior heaters. Well known, too, is the dazzling sunshine which often makes low temperatures more pleasant.

Farmers and summer visitors speak of hailstones as big as golf balls, of spectacular displays of lightning followed by torrential rains. Others remember the intense heat of the summer days when people seek refuge indoors or in a patch of shade from the burning sun.

Those who visit the area near Winnipeg in spring, especially in a flood year such as 1969, can never forget the vast expanses of flooded land which

make it seem that too much water must surely be the major problem of the area.

Everyone of these ideas is quite right. Intense heat, severe cold, and varying degrees of drought are the most striking features of the climate of the prairies, though conditions differ somewhat from place to place. The prairie weather is varied and dramatic. It is like a play in which the action and the settings are always changing. Heat, cold, and water play their roles in an unusually spectacular manner.

Facts and figures for a prairie weather station

Figure 6-4 provides information about the weather records in Winnipeg.

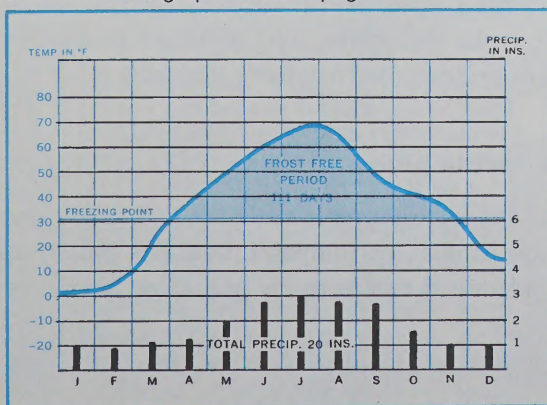
(a) Compare the total precipitation with that for Hamilton. Winnipeg, with 20 inches of precipitation, is in one of the best watered parts of the prairies. How does Figure 6-30 (page 32) help to explain why drought is thought to be one of the outstanding features of prairie climate?

(b) When does most of the precipitation occur in Winnipeg? Why is this helpful to the farmers? Why does the city of Winnipeg not need to spend as much money for snow removal as such eastern cities as Montreal?

(c) For how many months are the average temperatures below freezing? Why do Winnipegers spend a great deal on warm rather than waterproof winter clothing? Why can farmers without livestock take vacations or work at city jobs during the winter months?

(d) Compare July weather conditions in Winnipeg with those in Southern Ontario. What advantage do the people of Hamilton and the Niagara region have when they want to escape from the summer heat? Thunderstorms and torrential rain often provide relief from the heat but may cause severe damage to both buildings and crops.

6-4. Climatic graph of Winnipeg.



Date of last frost May 27

Date of first frost Sept. 15

Record high temp. 108°F.

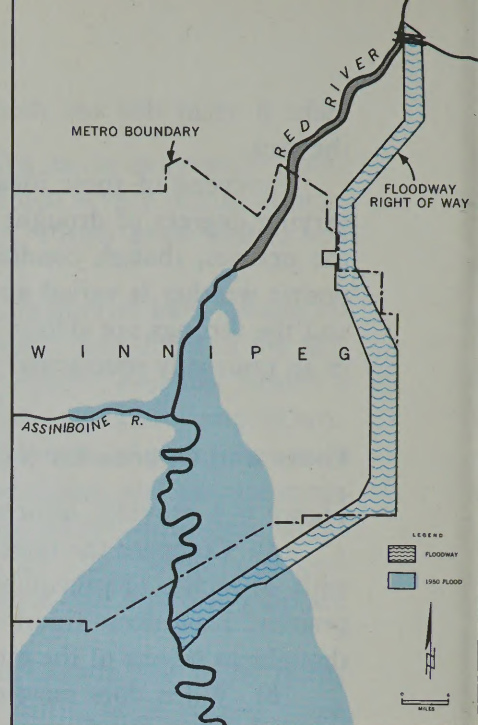
Record low temp. -54°F.

Total annual snowfall 49"

Longest rainless period . . . 32 days.



6-5. Floodwaters of the Assiniboine River disrupt communications and cover valuable farmland (P.F.R.A.).



6-6. The Floodway around Winnipeg has been built to help control flooding.

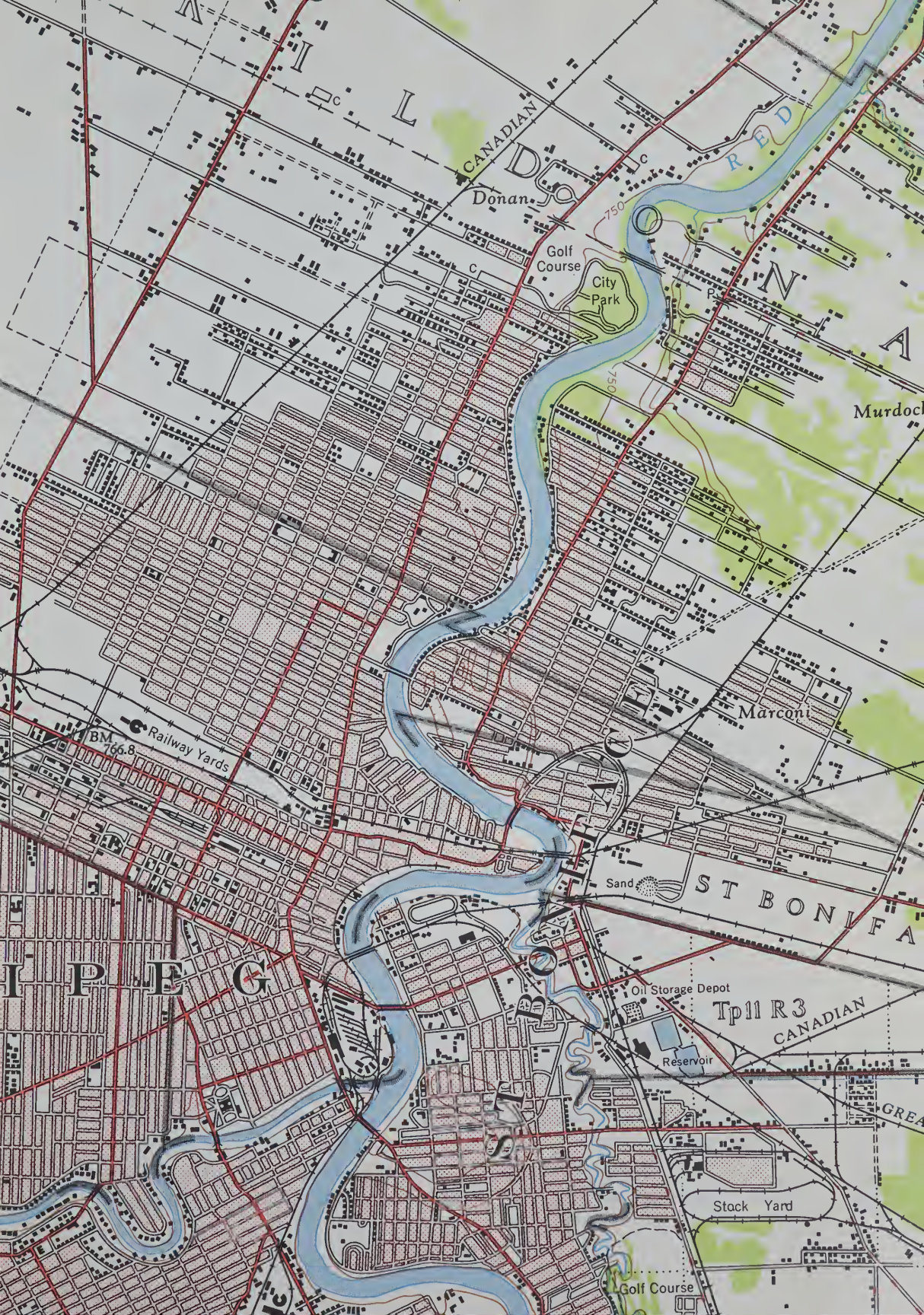
(e) Figure 6-5 shows what happens when a rapid spring thaw is accompanied by heavy rains. In 1950 flood damage exceeded one hundred million dollars. Why can even a fairly slight rise in the river level flood so many miles of land? Figure 6-6 shows how a “floodway” has been dug out around Winnipeg to try to prevent another such flood. It cost 64 million dollars and will not be used for shipping, irrigation, or power. Most of the time it will remain dry, but when the rivers rise high again it will carry off the flood water and save the city of Winnipeg and the farmland around it from flood damage.

(f) In what ways is wind a problem on the prairies? Though it is often unpleasant and may sometimes cause a great deal of damage, wind can be used to power pumps and even to make electricity. The windmill pump is a common sight on the prairies and provides water for many dugouts.

Winnipeg — a great city on a fertile plain

1. The map in Figure 6-7 and the photograph in Figure 6-8 show part of the Red River plains. In the heart of this rich farmland there has grown up the greatest city of the Canadian prairies. It has as many people as Edmonton

6-7 (Opposite). A topographic map of Winnipeg on the scale of 1:50,000, Sheet 62H/14 East Half, in the National Topographic Series. (Department of Mines and Technical Surveys, Ottawa).





6-8. An aerial view of Winnipeg (National Film Board).

and Regina put together, and is the fourth largest city in Canada.

2. How does the map confirm that this area is very flat? How high above sea level is this land? Name the two rivers shown. Which way is the water flowing? In which direction was the camera pointing when the photograph was taken.

3. Why did the early farmers value frontage on the river? Farms were laid out in long strips running back from the river. How has this influenced the street pattern of Winnipeg?

4. Winnipeg was first founded as a fur trading post. Trappers usually brought in their furs by water. Why was Winnipeg a good place for a trading post?

5. Count the number of railways fanning out from Winnipeg. How many railway yards are shown on the map? Winnipeg has been called "the Gateway

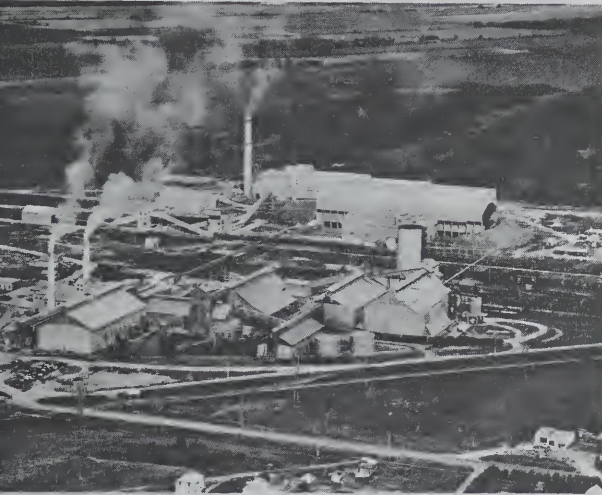


6-9A. Railway yards and oil refinery in St. Boniface.



6-9B. Finishing buses in Winnipeg.

6-9C. A large cement plant on the outskirts of Winnipeg.



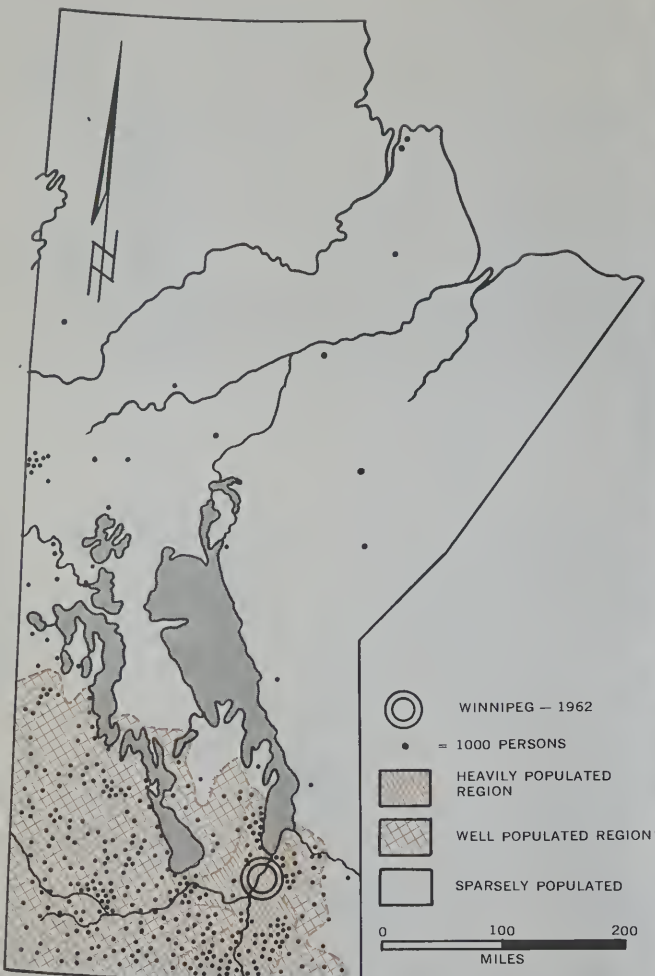
6-9D. A large flour mill in St. Boniface.



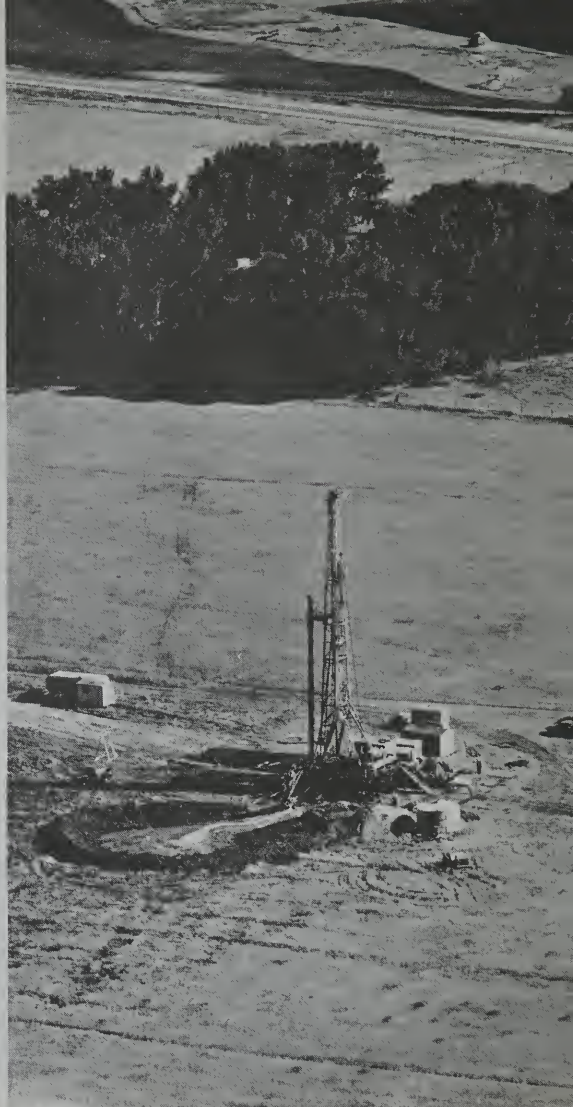
6-9. Winnipeg is the greatest industrial city on the Prairies. (Manitoba Department of Industry and Commerce).

to the West" and "Crossroads City," and has always been noted as a transportation centre. How does Figure 6-18 help explain why so much traffic is funnelled through Winnipeg?

6. St. Boniface, on the opposite bank from Winnipeg, is the largest French-Canadian city outside Quebec. Name two major industries of this city that are recorded on the map. Many famous meat packing firms have large factories in St. Boniface. The photographs in Figure 6-9 show some other important industries of Winnipeg and St. Boniface. Which of them processes agricultural produce from the surrounding plains? Which uses clay and limestone produced from the deposits in Southern Manitoba? Suggest why making and servicing transportation equipment employs so many people in Winnipeg. Clothing, printing and publishing, and the production of chemical and paper products are more of Winnipeg's varied industries. Nearly half the



6-10. The distribution of population in Manitoba.



6-11. An oil well on a farm near Virden (Manitoba Dept. of Industry and Commerce).

manufactured goods made on the prairies is still made in Winnipeg despite recent industrial developments in other centres.

7. Look ahead to Figures 6-14 and 6-31 and find what sources of power are available to Winnipeg. This city is closer to the Canadian Shield than most large Canadian cities. Why is this an advantage to Winnipeg's industrial development?

8. Suggest other ways in which Winnipeggers make use of the parts of the Canadian Shield near the city.

Winnipeg is one of Canada's great cities. It is a noted transportation centre, a large industrial area, a university city, and the provincial capital. Its great size is best appreciated from the air. By day it sprawls out across

the flat prairie like a creeping plant, with the Red River winding through the centre. In darkness it is visible from afar, sparkling like a jewel in the clear prairie night.

Explaining some facts about Winnipeg

Explain why:

- (a) The Cree Indians called the Winnipeg area “Winni-nipi” — muddy water.
- (b) Early traders called Winnipeg “the Forks.”
- (c) We often refer to Winnipeg as the “Gateway to the West.”
- (d) Portage and Main (in downtown Winnipeg) is called “the windiest corner in Canada.”
- (e) Skating, curling, and hockey are the most popular sports in Winnipeg.
- (f) Houses in Winnipeg are fitted with storm windows in winter and wire screens in summer.
- (g) 64 million dollars was spent to dig a ditch around Winnipeg.
- (h) There are many French place names on the east side of the Red River.
- (i) Winnipeg is the largest manufacturing city on the Canadian prairies.
- (j) Winnipeg is the junction of many varied transportation routes.

Brandon — Manitoba’s second largest city

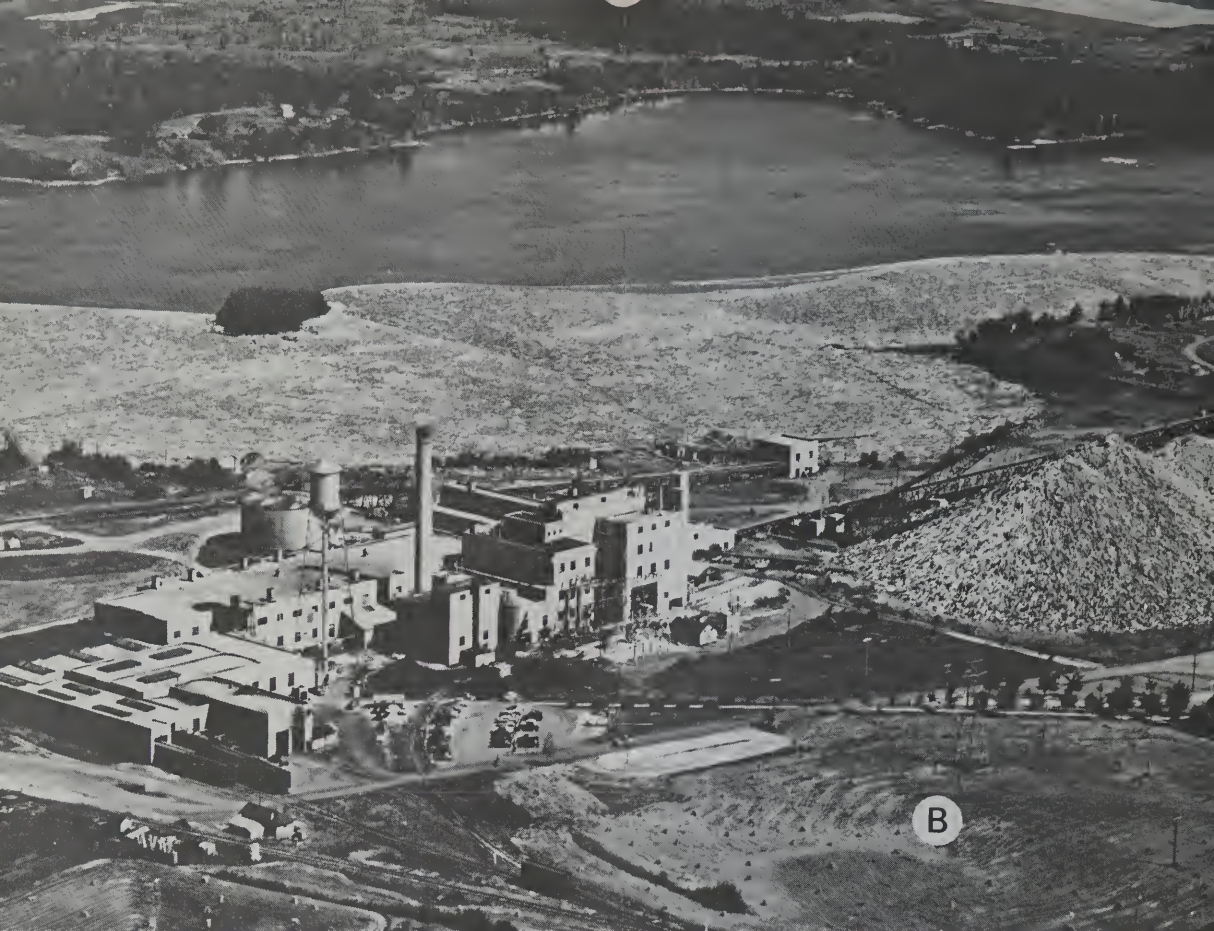
Brandon is an important regional centre in Southwestern Manitoba. Use an atlas and refer to Figure 6-18 to find out why Brandon is in a good position to act as a trading centre. What forms of transportation serve this city? It provides services for a large, well populated area. Factories in Brandon process many of the products of the surrounding country. What type of factories would you expect to find?

Southern Manitoba is a well populated area with varied resources

1. Figure 6-10 is a population map of Manitoba. In which part of the province—north, centre, or south—do most of the people live? Slightly more than half of the total population live in Metropolitan Winnipeg. Why are the plains around the city heavily populated?

2. Most of the well populated part of Southern Manitoba is prosperous farmland. Name some of the crops grown.

3. The photograph in Figure 6-11, taken near Virden, shows what the drilling area on an oil well looks like. The tall structure is an *oil derrick* which holds the drilling apparatus. Very little space is required for the derrick and



6-12. Pine Falls—where the plains meet the Shield (Manitoba Department of Industry and Commerce).

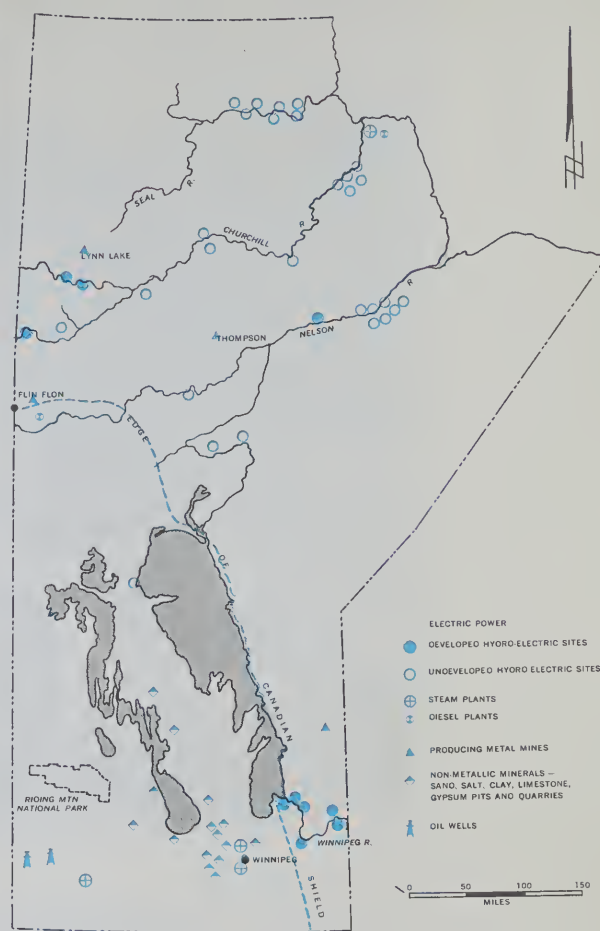
the cluster of buildings. Why is this an advantage when oilfields lie under good farmland? In many parts of the Prairie Provinces land is used in two ways as shown in this photograph.

4. What industry is shown in Figure 6-12? This photograph shows where the plains meet the Shield. Which letters indicate these major regions? What characteristics of each region are visible in the photograph? Why is it an advantage for this industry to be near the edge of the Shield?

5. Though Manitoba is in the middle of a huge continent, commercial fishing is the chief occupation in some towns, such as Gimli on Lake Winnipeg. The boats shown in Figure 6-13 are strongly built to withstand the twenty and thirty foot waves which sometimes occur. Why is fishing on Lake Winnipeg something like fishing at sea? The fishing villages look very much like those on the sea coast, with nets drying on picket fences and floats and packing cases piled on the piers. How do you know that the photograph was taken in summer? In winter, fishermen camp out on the frozen lakes in wooden cabins. They cut holes through the ice and let down



6-13. The fishing fleet in Gimli harbor (Manitoba Dept. of Industry and Commerce).

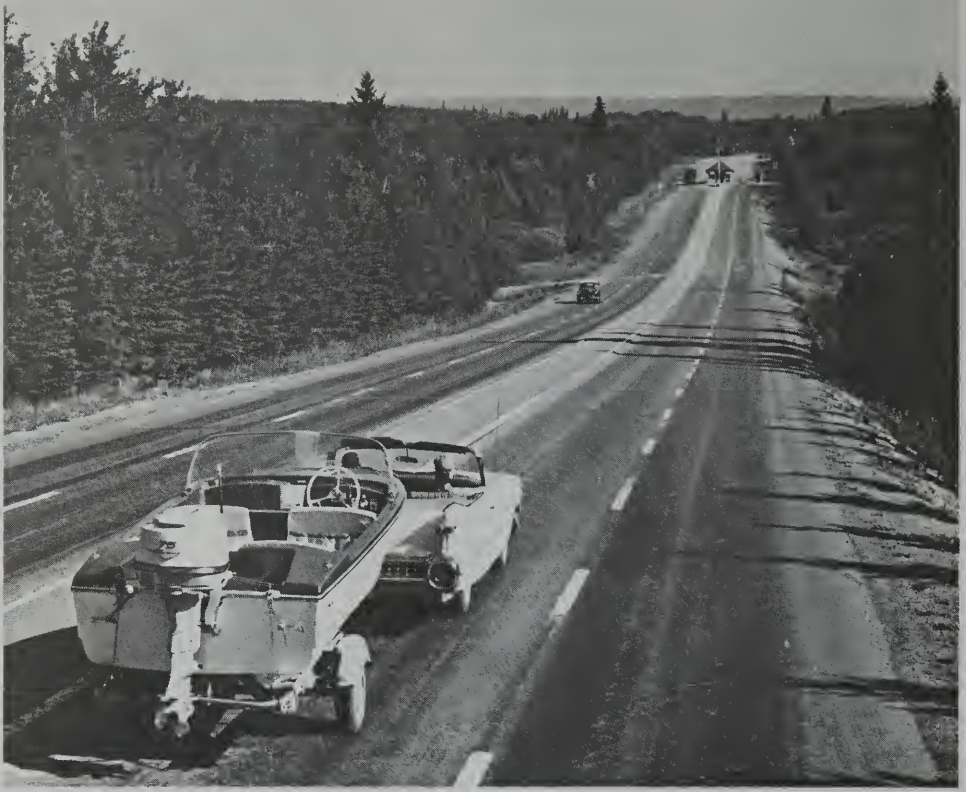


6-14. Mineral wealth and sources of energy in Manitoba.

baited lines. Commercial fishing is important in the lakes of Manitoba, and sport fishing also attracts many visitors and brings income to the province. In addition to the large lakes, there are thousands of small lakes and creeks which attract tourists.

6. How many of the towns with more than 1,000 people shown in Figure 6-10 are located in Southern Manitoba? How many are there in Northern Manitoba? Most of the large factories are in Winnipeg, but there are many plants producing such things as potato products, canned soup, vegetable oils, and sugar in the smaller cities. Suggest why such industries as these are widespread in Southern Manitoba. There is an oil refinery at Brandon and a steel mill at Selkirk. What important group of industries in Winnipeg requires supplies of steel? There are also many factories producing articles, such as clothing, that do not use locally produced raw materials. Why is Southern Manitoba a good place to build this type of factory?

7. Figure 6-14 shows the minerals produced in the province. What type of minerals is obtained from the glacial deposits of Southern Manitoba?



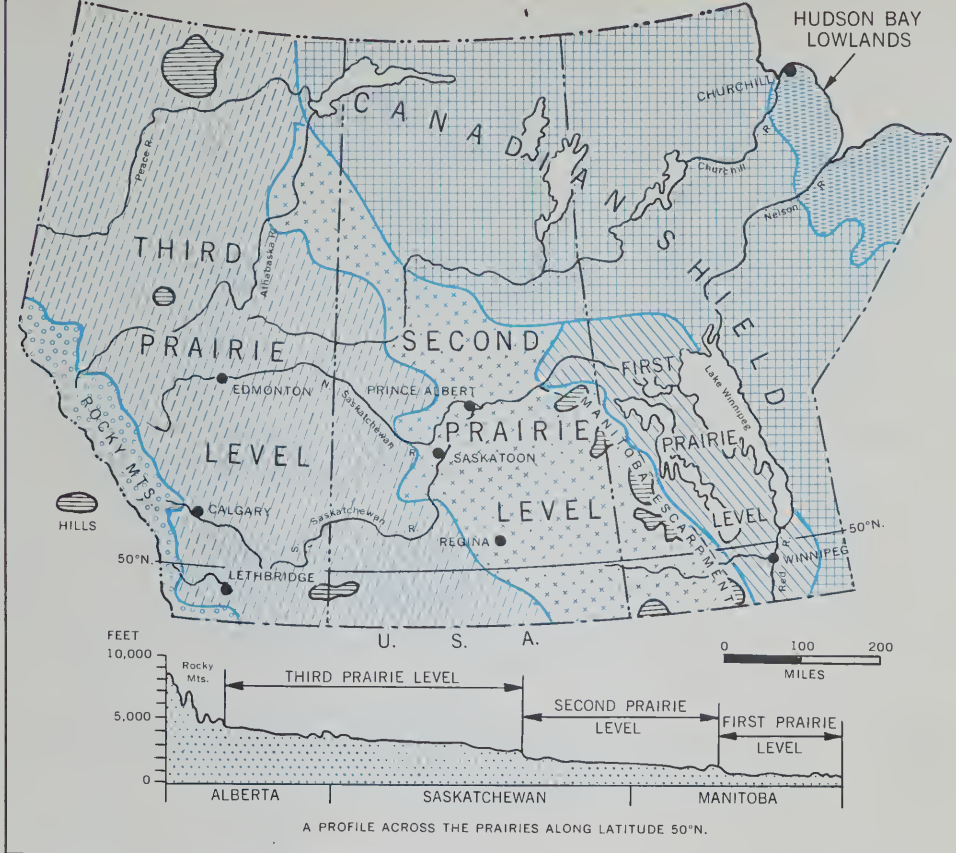
6-15. The entrance to Riding Mountain National Park (Manitoba Department of Industry and Commerce).

How do these minerals differ from those found in the old, hard rocks of Northern Manitoba?

8. Provide a heading or sub-title for each of the numbered paragraphs above.

Many thousands of people live in Southern Manitoba. They work on farms, in factories, and in offices, schools, and stores. In their leisure time they like to hunt and fish, to drive and hike, to visit different places, and to relax in pleasant surroundings. Figure 6-15 shows the entrance to Riding Mountain National Park. This is one of the most visited parks in Canada. How far is it from Winnipeg? from Regina? Why is this area easily and quickly reached by car? How is this country very different from that shown near Winnipeg in Figure 6-1? Suggest why the people in the car in the foreground are going to the park. There are 85 miles of scenic roads in the park, lakes for boating and swimming, hiking trails, wildlife enclosures, and sports facilities. Here is a description of the view from Riding Mountain.

The view from the summit was superb, enabling the eye to take in the whole of Dauphin Lake and the intervening country, together with part of Winnipegosis Lake. The outline of Duck Mountain rose clear and blue in the northwest, and



6-16. Major relief features of the Prairie Provinces.

from our point of view the Riding and Duck Mountains appeared continuous, and preserved a uniform precipitous, bold outline, rising abruptly from a level country lying 800 to 1,000 feet below.*

Riding Mountain is part of the Manitoba Escarpment shown in Figure 6-16. How high is the summit of the Escarpment above the level land? Which words or phrases in the passage above tell you that the slope is very steep? The Manitoba Escarpment is the same kind of feature as the Niagara Escarpment in Ontario. In Manitoba it has been divided into sections by the valleys of rivers which have cut through the Escarpment. It is not surprising that the sections appeared continuous to the writer. He visited Riding Mountain in 1858. If he visited there today he would certainly describe the view of the farmland to the east. The green, gold, and brown shapes of the fields look like a huge checkerboard or patchwork quilt laid out below the Escarpment.

Figure 6-16 shows how the Manitoba Escarpment divides the second prairie level from the first prairie level. What is the approximate elevation of the first prairie level shown around Winnipeg in Figure 6-7? How much higher is the second prairie level which extends westward from the summit of the Manitoba Escarpment? A similar, but less striking escarpment divides the second prairie level from the third. In which province is this third feature

*Quoted from *Red River and Saskatchewan Expeditions*, by Henry Youle Hind, London, H.M.S.O., 1860, page 107.

Winnipeg	Leave	10:05 a.m.	Friday
Dauphin	Arrive	2:30 p.m.	Friday
	Leave	6:00 p.m.	Friday
Flin Flon	Arrive	9:30 a.m.	Saturday
	Leave	12:01 a.m.	Sunday
Thompson	Arrive	10:30 a.m.	Sunday
	Leave	7:00 p.m.	Sunday
Churchill	Arrive	8:00 a.m.	Monday
	Leave	6:30 p.m.	Tuesday
The Pas	Arrive	2:00 p.m.	Wednesday
	Leave	7:00 p.m.	Wednesday
Winnipeg	Arrive	9:30 a.m.	Thursday

6-17. Timetable for "North of '54'" six day tour of Northern Manitoba.

located? The three prairie levels form three gigantic plains or plateaux rising from the Canadian Shield to the Rocky Mountains.

North of "54"*

Every August a group of tourists gathers in the railway station at Winnipeg. Though this is usually a very hot month in the city, the travellers are carrying warm coats, stout shoes, and rubbers. They are leaving for a six-day train tour through Northern Manitoba, and may need warm clothing when they reach the coast of Hudson Bay.

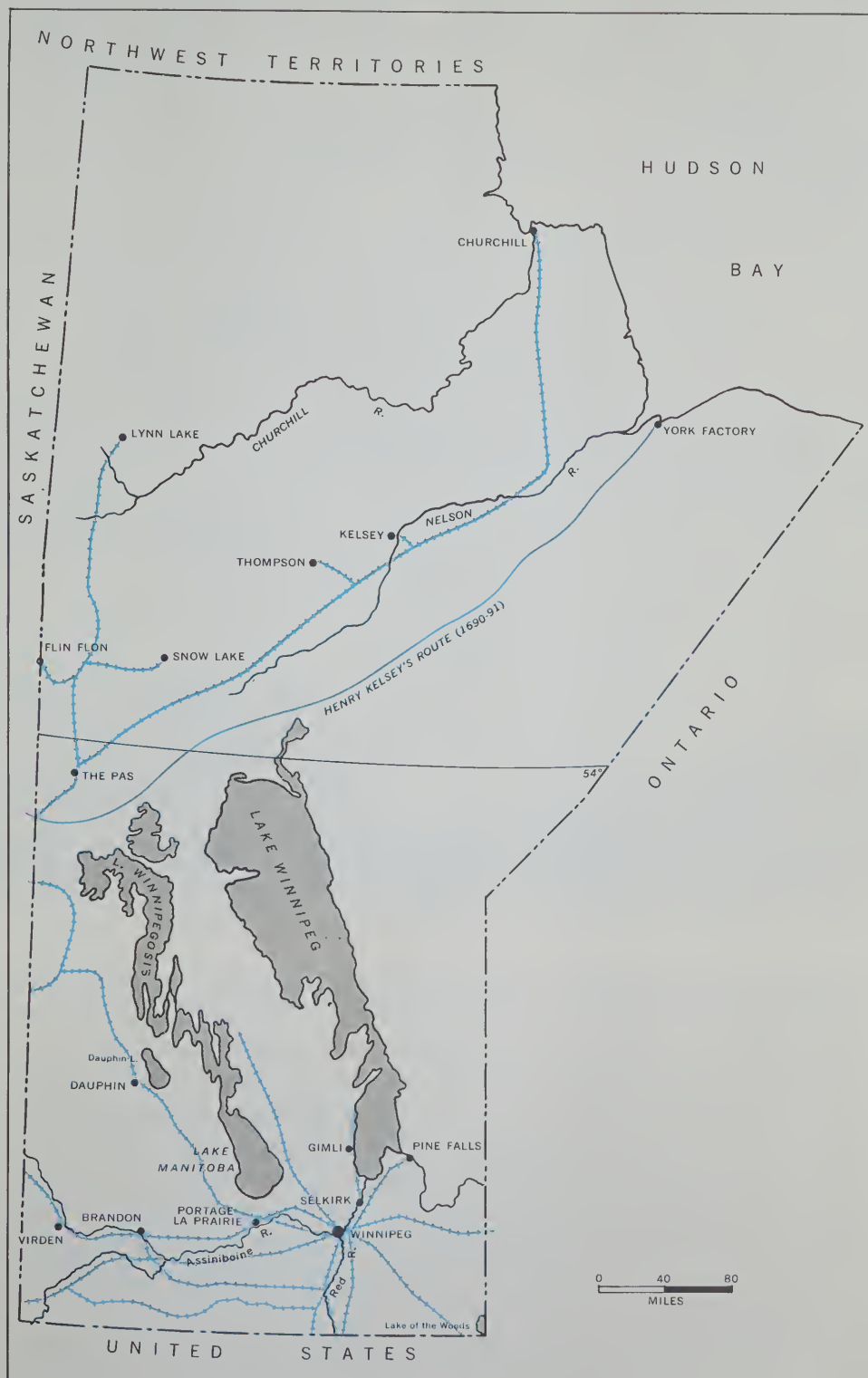
Figure 6-17 is a copy of the timetable for the trip. This train proceeds directly to Flin Flon, but on regular schedules passengers must change trains at The Pas, which is the southern terminus of the Hudson Bay Railway and is the base or gateway city for most of the traffic into Northern Manitoba. The summer tour stops in The Pas on its return journey. How far is The Pas from Winnipeg? How long does the train take to cover this distance? What type of country does the train pass through on the first and last stages of the trip?

Figure 6-18 is a map showing the route of the tour. Why is the trip called "North of '54'"?

A side-trip to Flin Flon

A few miles outside The Pas there is an important railway junction. One line continues in a northeasterly direction toward Churchill, while the other leads due north. A paved road runs parallel with this track all the way to Flin

*For material used in this section the authors are indebted to Mr. J. A. Skull of the Canadian National Railways.



6-18. A journey through Manitoba.

Flin. There are many camp and picnic sites along the route, which passes through well-wooded country with many island-studded lakes. This section of the Canadian Shield is easily reached by tourists.

Northern Manitoba's largest city

Figure 6-19 is a photograph of Flin Flon.

1. How can you tell that this photograph was taken in the Canadian Shield?
2. What seems to be the main source of employment in Flin Flon?
3. Water, steam, and sewage pipes are laid above the ground and covered by wooden sidewalks. Suggest why they are not laid underground. Why is it an advantage to have the steam pipe close to the water and sewage pipes? Many wooden staircases climb over rocks and from one level to another.

Flin Flon has been a mining town since 1928. It has 12,000 people and is the largest centre in Northern Manitoba. It is close to the provincial border, and about half the ore and all the hydro-electricity used in the smelter come from the Saskatchewan side. The other ores come from newer mines in the Snow Lake area. Copper, zinc, silver, and gold are produced.

Many other new mining centres have grown up in recent years. In 1954 cat trains hauled buildings and equipment to the nickel mines at Lynn Lake. How far north of The Pas is this development? On their journey to Flin Flon travellers can see the railway that now serves Lynn Lake leading due north into the bush. The journey between this junction and the new town takes 9 ½ hours each way. This long trip through the wilderness of the Canadian Shield is not included in the summer tour. Instead, tourists are shown another new town, Thompson, which is much closer to the main railway line.

Flin Flon to Thompson — a general look at Northern Manitoba

For hundreds of miles on its journey northeastward, the railway passes through the forests, across the streams and swamps, and alongside the lakes of the Canadian Shield. Beyond the small settlements along the railway line, the wilderness stretches for untold thousands of square miles. This is beautiful country, excellent for hunting, fishing, and canoeing. Many people holiday on the shores of the lakes close to The Pas, but as the train gets further from the urban centres the settlements become smaller. In some stretches only the tracks themselves suggest that man has ever been in this wild and undeveloped country.

The tiny settlements usually include a store, a mission church, and a ranger station. Tractors are often lined up beside the railway line. In winter,

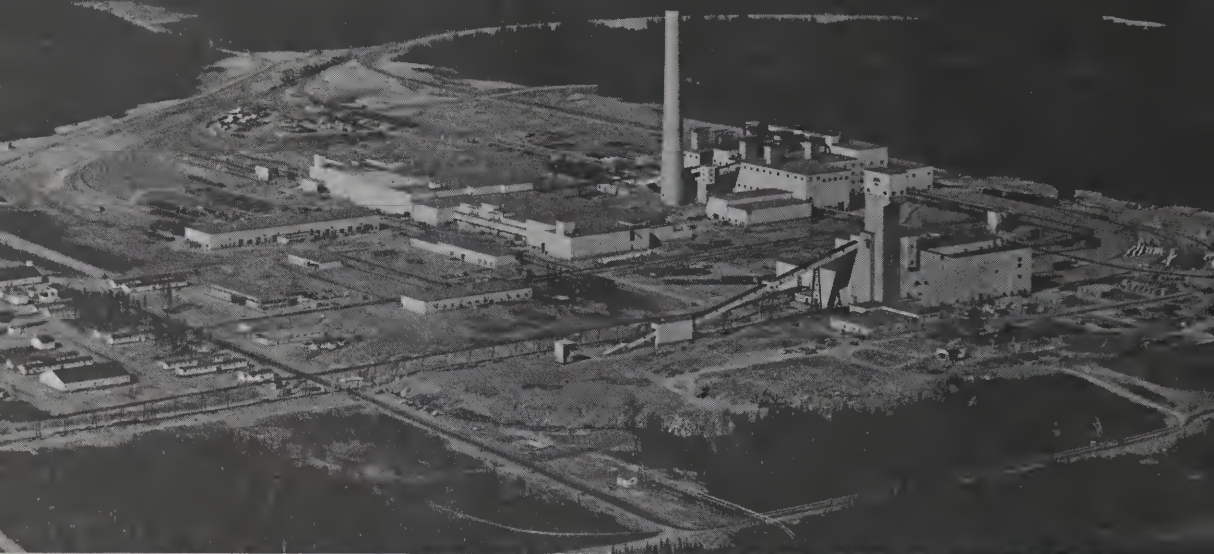


6-19. Flin Flon—a mining town in the Canadian Shield (Manitoba Department of Industry and Commerce).

when the frozen lakes and snow-covered surface provide suitable conditions for sledges, these tractors haul supplies to remote mining and lumbering settlements. The arrival of the train is an exciting event, for it brings mail and perishable goods from the south. Bananas, oranges, popcorn, soft drinks, and ice cream are quickly sold out.

In some places, gardens produce small fruits and vegetables. Wheat and oats have been grown on an Experimental Farm. It is thought that some of the clay lands could be farmed commercially, as soil and climate are similar to those in the Clay Belt of Northern Ontario. Much of the land is too rocky or too badly drained for farming to be attempted.

Though the land is heavily wooded, there is little evidence of forest industries. Some pulpwood is cut, but the forests are very little developed at present.



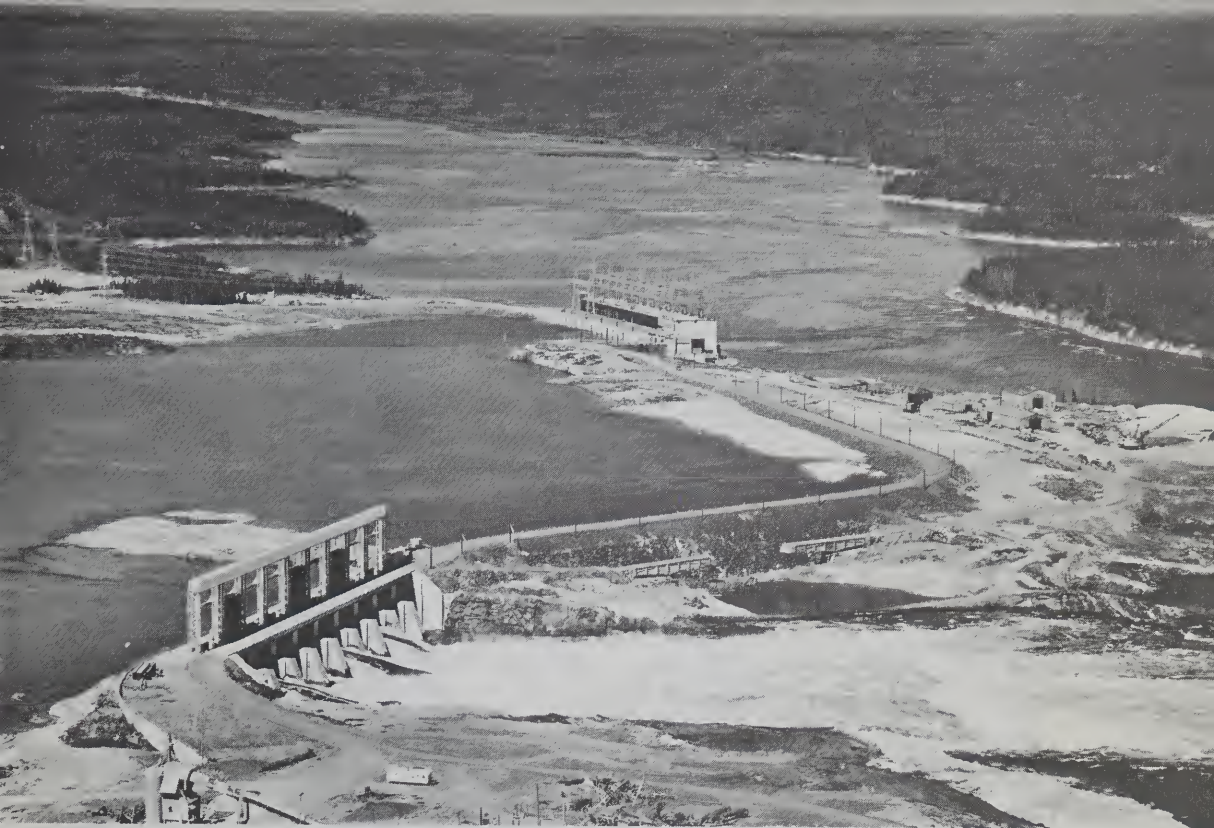
6-20. The smelter at Thompson rises above the forested Shield country. (Manitoba Department of Industry and Commerce).

During their trip, the travellers see only one other passenger train. This is one of the southbound trains which leave Churchill three times a week. They see many freight trains, however. In the summer months about 14,000 carloads of grain are exported from Saskatchewan via Churchill. On their return journey south, some of these freights carry cargoes unloaded from ships calling at Churchill to pick up grain.

Thompson — Manitoba's newest community

Travellers reach Thompson by a spur line. Figures 6-20 and 6-21 show the landscape of this area. Why was it a difficult place to build a town? Everything from power shovels to loaves of bread had to be hauled through 35 miles of bush. Before the railway spur was completed in 1957, cat trains hauled goods 24 hours a day, seven days a week, until the spring thaw made the trails impassable.

Visitors to Thompson today see neat, suburban streets with stores, churches and schools, a bowling alley and a curling rink. Unless they glimpse the tall stack of the smelter rising above the trees they may forget why this town was built. The plant, with its headframe, smelter, and refinery is two



6-21. The hydro-electric plant at Kelsey provides power for the smelter at Thompson. (Manitoba Department of Industry and Commerce).

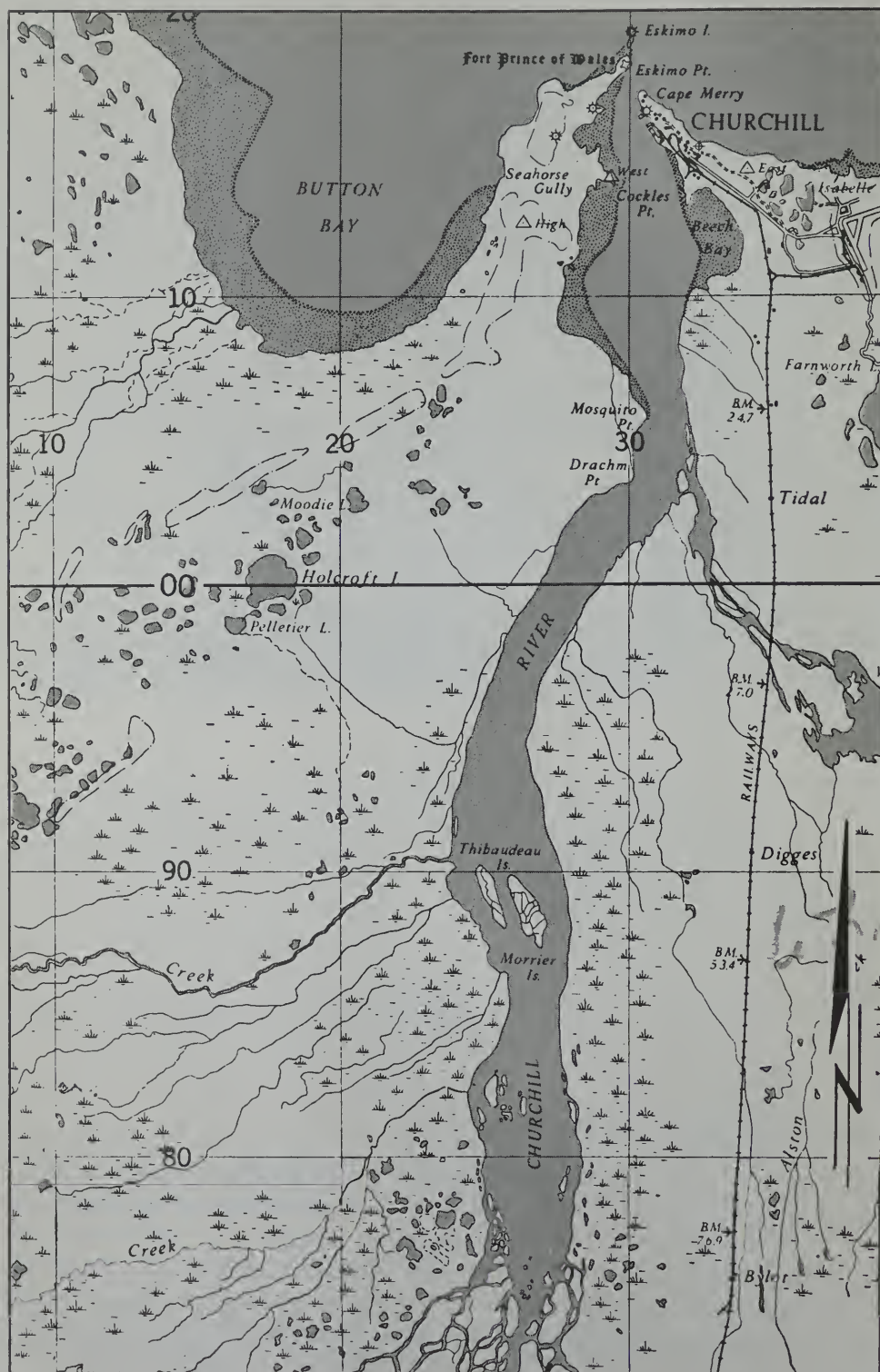
miles from the townsite, and the hydro-electric plant is 53 miles away at Kelsey. It is operated entirely by remote control from Thompson. Visitors are taken to see the newest types of machinery, which have been installed to keep production costs as low as possible. When it reaches full production, Thompson expects to provide one eighth of the total world output of nickel. On the sidings around the smelter, there are trainloads of nickel ready for shipment to markets in Canada, the United States, and the United Kingdom. It is used for making stainless steel, in the electroplating industry, and in many alloys.* In these final forms it appears in most of our homes, schools, and factories.

Rivers that are "mighty with falls"

This is how Henry Kelsey described the rivers of Northern Manitoba in his diary written in 1692. Why did these falls and rapids present an obstacle to the early exploration and development of the region?

Train travellers are seldom far from rushing water on their trip. At Kettle Rapids the train crosses the Nelson River at a very slow speed so that visitors can view and photograph the great curling waves which seem very close to the long bridge. Water from the Red River system and from rivers

*Metal mixtures.



6-22. A large-scale map of the area around Churchill on the scale of 1:250,000 (Department of Mines and Technical Surveys, Ottawa).

extending all the way to the Rocky Mountains is rushing through this point. This is only one of the many potential hydro-electric power sites in Northern Manitoba. Which rivers are shown to have potential hydro-electric sites in Figure 6-14? As yet only three sites, Kelsey and two smaller ones south of Lynn Lake, have been developed. Suggest why many sites on the Winnipeg River in southeastern Manitoba have been developed, while there are few in Northern Manitoba.

The Hudson Bay Lowland

For the final 155 miles of its journey the railway heads due north. It leaves behind the forests and lakes and follows an absolutely straight course across the frozen muskeg. The trees quickly thin out and become stunted, with nearly all the growth on the south side. Cold winter gales sweep across this country and slow down growth. Which direction does the wind come from most of the time? The sphagnum moss which covers the ground is such a good insulator that permafrost* lies only a few inches below the surface even in midsummer. At Bylot, shown in Figure 6-22, travellers notice that areas close to the track have been stripped of moss. It has been taken to Churchill to insulate the water mains and is sometimes sold commercially. The telegraph line alongside the track is no longer carried by poles sunk into the ground but strung on tripods standing on the muskeg. Suggest why this is so.

A large-scale map of the area around Churchill

1. How can you tell that the land in Figure 6-22 is very flat? What is the elevation of the land along the railway?

2. Which of the following would a traveller probably see from the train: marshes, small lakes, dense forest, many roads, rich farmlands, low badly drained land, sawmills, high cliffs, piles of pulpwood, open pit mines? In earlier days the train often had to stop because of herds of caribou on the track, but little wildlife is seen today.

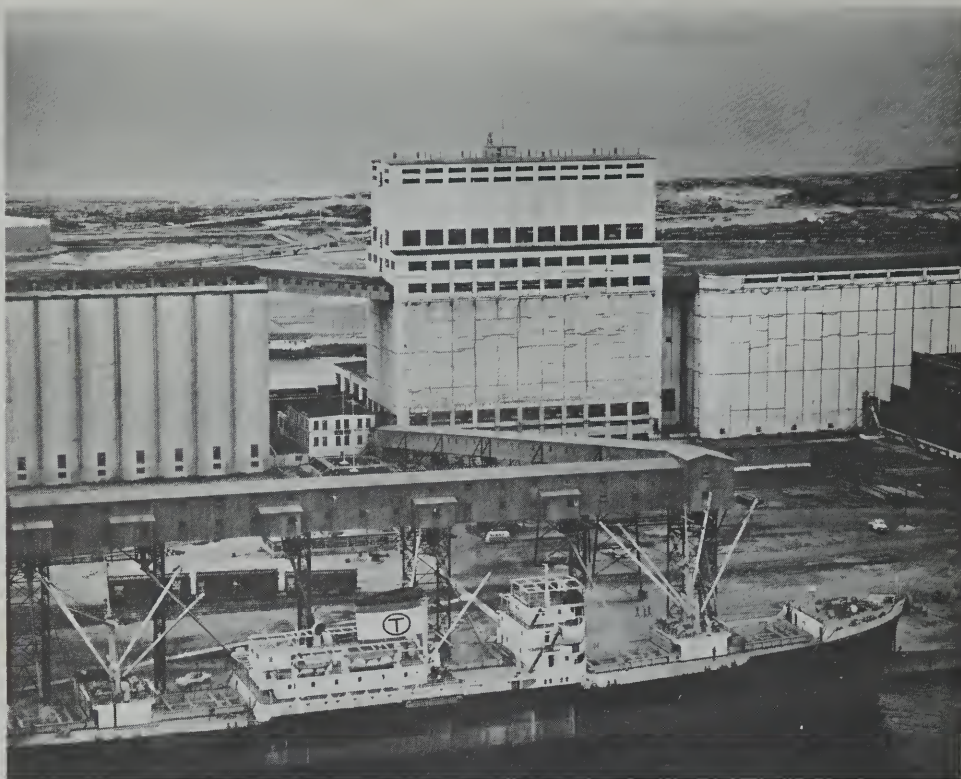
3. There are diesel and steam-operated electric plants at Churchill. Why is there no hydro-electricity available locally? Suggest how coal and oil can be brought in.

Tidewater lands of Manitoba

Tidal is an exciting place. For some miles the train has been running parallel to the Churchill River. It is a beautiful, clear river with many small islands and frequent rapids. It is similar to many throughout northern Canada. But

25

*Permanently frozen ground. Below the surface, which may thaw briefly in summer, the ground is permanently frozen to a great depth.

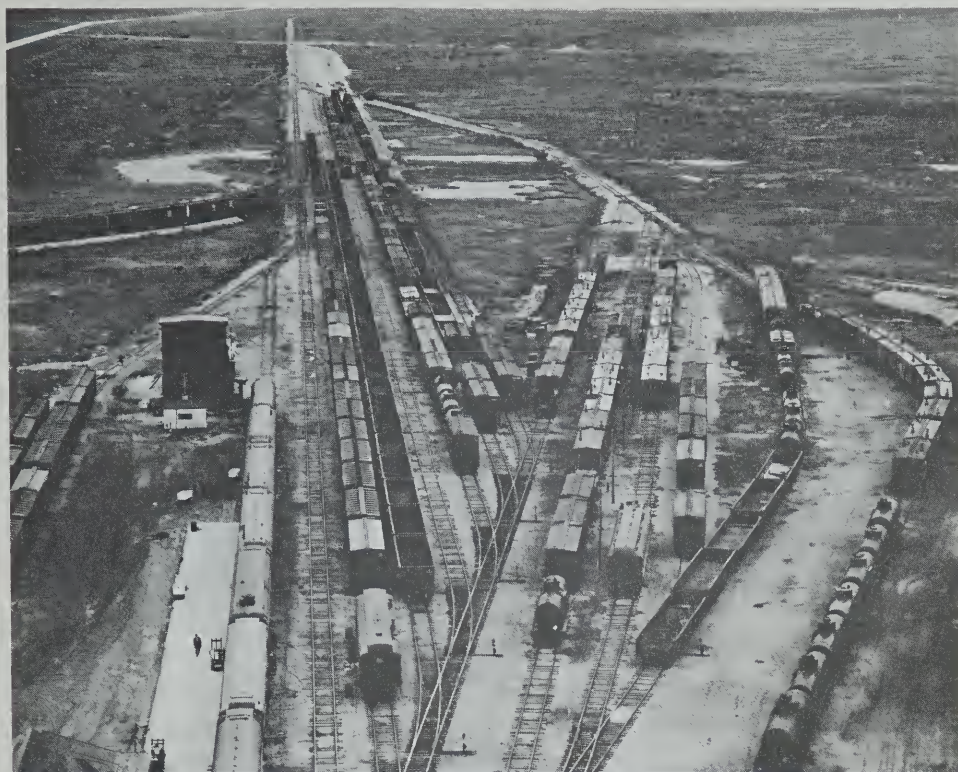


6-23. Loading grain from the elevator at Churchill on Hudson Bay (Manitoba Department of Industry and Commerce).

from Tidal northwards its waters are mixed with the salt water of Hudson Bay. The train is approaching Manitoba's northern seacoast, where polar bears sometimes roam the shores and Eskimos hunt white whales in the Bay. When the huge white elevator becomes visible across the windy flats, travellers realize that their outward journey is over. They have come from the rich farmlands of the Red River Plains to the treeless tundra where only very hardy plants can grow. They have visited mines and power plants. They have seen vast areas of untouched forest and great quantities of unharnessed power. They understand better some of the problems of living in the north. They realize that this region will most likely remain thinly populated, but that it is a great source of wealth for the province. The development and conservation of its resources are the concern of every Canadian.

Churchill — a seaport in the Prairie Provinces

The photographs in Figures 6-23 and 6-24 were taken in summer. How do they suggest that the port of Churchill is a very busy place at this time? For a few weeks during the height of the shipping season, Churchill is the busiest Canadian grain port. Figure 6-25 shows the routes by which prairie wheat may



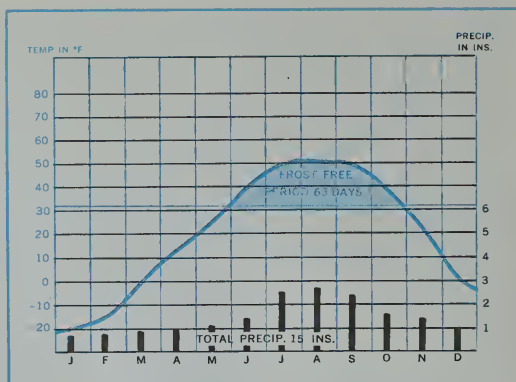
6-24. Railway yards on the tundra—at Churchill, Manitoba (Manitoba Department of Industry and Commerce).

6-25. This map shows how the Prairie wheat crop is marketed in a typical year.



6-26. Climatic Graph of Churchill

Date of last frost June 28
 Date of first frost August 30
 Record high temp. 96°F.
 Record low temp. -57°F.
 Total annual snowfall 55"
 Prevailing wind NW



be exported. The cost of sending a bushel of wheat to Europe via Churchill is 13 cents less than sending it via Montreal. The part of the journey by rail always costs more than the part by water. Why is it cheaper to export prairie wheat via Churchill than via the St. Lawrence? How has the St. Lawrence Seaway helped to reduce the cost of shipping wheat via Montreal?

Though the Churchill route is the cheapest, this port still handles only a small fraction of the total wheat crop. How does Figure 6-26 help to explain why the shipping season at Churchill is only three months long? Churchill itself is usually open before the end of July but ships coming from the Atlantic cannot reach there earlier. How does Figure 6-25 help explain why this is so? Icebreakers help to clear the channel in spring.

Grain can be stored indefinitely. How has Churchill provided for storage of grain that cannot be shipped during the short season? The modern elevator is equipped with machinery for dumping, cleaning, and grading wheat quickly. At the sheltered, deep-water anchorage three vessels can load at once by means of spouts from the elevator. During the long hours of daylight in summer, vessels are loaded as quickly as possible. Why does Churchill have longer summer days than Toronto and Montreal?

Why is wheat for China and Japan not sent via Churchill? Prince Rupert and Vancouver have greatly increased their wheat exports as a result of recent wheat sales to these countries. What climatic advantage do the Pacific ports have over Churchill?

The railway and the grain it carries are the chief reasons for Churchill's existence. It is the only major seaport between the Great Lakes-St. Lawrence system and the Pacific coast.

What other products from Northern Manitoba might be exported by this route? Plans have been made to increase the variety and tonnage of goods handled by this port. It is especially desirable to increase the quantity of imports. Goods intended for sale in western Canada, for example European cars, can be brought in by this route. Why is it an advantage to have as many imports as exports using the port and the railway?



6-27. Tourists at Fort Prince of Wales (Canadian National Railways).

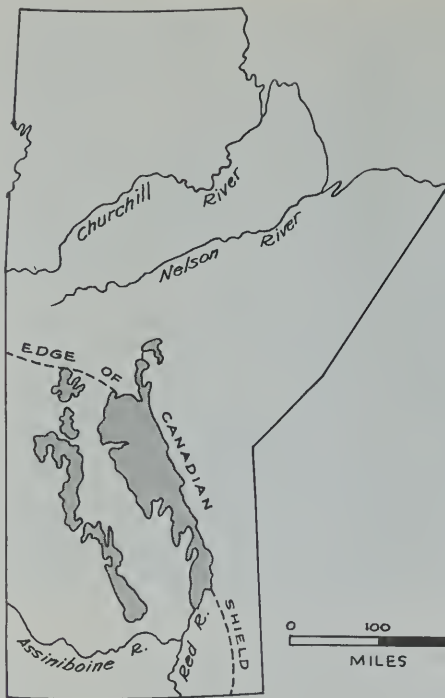
The great white elevator overshadows everything at Churchill, but there are many other things to see and do. Polarbears sometimes swim ashore in summer, and whales are often seen in Hudson Bay. In this cold, windswept area it is sometimes difficult to distinguish these great mammals from the floating ice and surf on the water. Hunting whales is a sport for tourists and also a commercial activity. At the whaling station the oil is processed for fat. Meat and blubber are fed to sled dogs and to animals on the fur farms.

At the dock there are small boats which have come from the Arctic settlements bringing in Mounties, missionaries, prospectors, and traders. Some are going on leave and being replaced by new arrivals. Others are picking up mail and supplies before returning for another season in the Arctic. Early in summer the icebreakers can be seen helping clear a channel through the pack ice in the Bay.

On the edge of the town is the airfield. Every week several planes leave for The Pas and for Montreal. Less frequently, smaller float and ski planes take off for Arctic settlements. Churchill also acts as supply base for the DEW line and for other Arctic defence posts, and has been the testing ground for various kinds of Arctic equipment. Why is Churchill well located and equipped to serve as a link between the Far North and southern Canada?

Visiting an historic site in the Canadian North

Figure 6-27 shows tourists visiting Fort Prince of Wales. (Find the Fort in Figure 6-22.)



	\$364,275,000
MANUFACTURING 35.4%	
	274,080,000
AGRICULTURE 26.7%	
	220,714,000
CONSTRUCTION 21.5%	
	110,040,000
MINING 10.7%	
	49,827,000
ELECTRIC POWER 4.8%	
	4,370,000
FISHERIES .4%	
	3,490,000
FORESTRY .3%	
	1,675,000
TRAPPING .2%	

6-29 (Above). Manitoba—net value of production.

6-28 (Opposite). A map test on Manitoba.

1. Suggest why stone rather than wood was used to build these defences. There has been a fort on this site since the Hudson's Bay Company built their first post in 1689. Why were they interested in claiming this remote area? Trapping and fur farming are still carried on around Churchill today.
2. What does this photograph suggest about the weather at Churchill in August?
3. What evidence is there that this photograph was taken in the Canadian North?

An interesting exercise

1. (a) Write a few sentences explaining why each of the following is significant in the development of Churchill as a settlement and port in northern Canada.

- Deepwater anchorage on the Churchill River
- Fort Prince of Wales
- The huge modern grain elevator
- The airfield and military installations
- White whales
- The Hudson Bay Railway
- Pack ice
- Direct ocean route to Europe

(b) Which natural conditions are favorable to the growth of a port on this site?

(c) How many man-made features helped make Churchill an important place?

2. Make a poster *or* brochure advertising the summer excursion on the Hudson Bay Railway. Advise tourists as to what clothing, etc. they require on this trip.

A review exercise on Manitoba

1. In a copy of the map shown in Figure 6-28 mark with the appropriate letter a place where each of the following statements is true.

A — A flat area of rich farmland

B — Part of the Canadian Shield where hydro-electric power, lumbering, and tourism are well developed

C — A very large area of undeveloped forest and power sites

D — An area where metallic minerals are found

E — An area where oil is produced and refined

F — The greatest concentration of people in the Prairie Provinces

G — The only seaport of the Prairie Provinces

H — A place where commercial fishing is important

2. Mark "X" in the area you would most like to visit. Write a paragraph giving reasons for your choice.

3. From the following list select *six* items which are produced in large quantities in Manitoba. For each product selected write a sentence describing the natural advantages that help make Manitoba an important producer.

lobsters

grain

coal

railway rolling stock

beef

ocean freighters

metals

freshwater fish

early vegetables and fruits

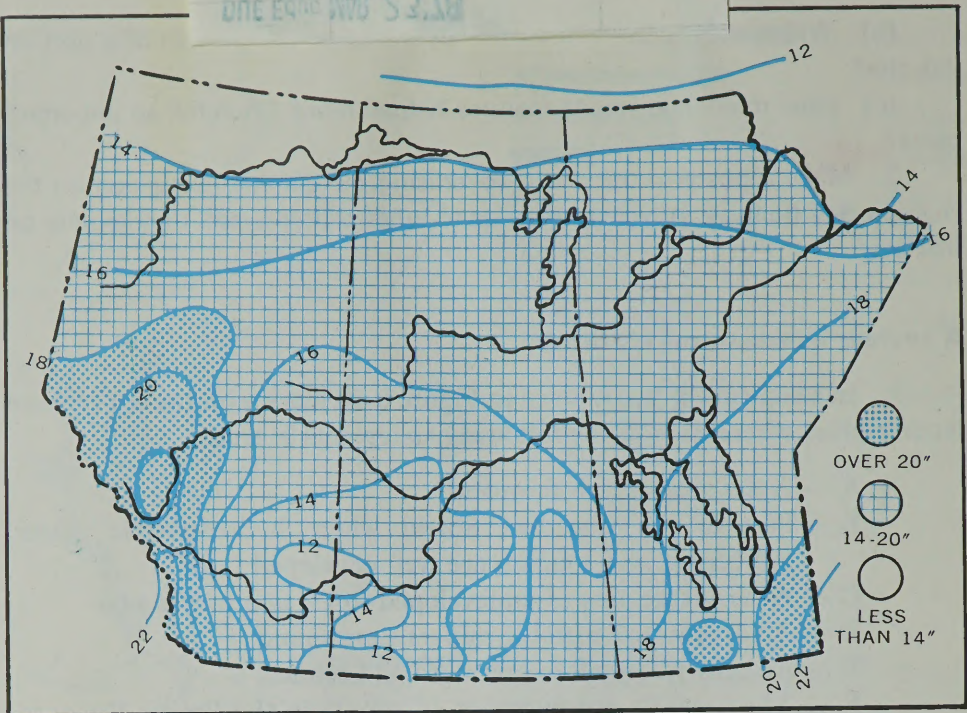
cement

oil

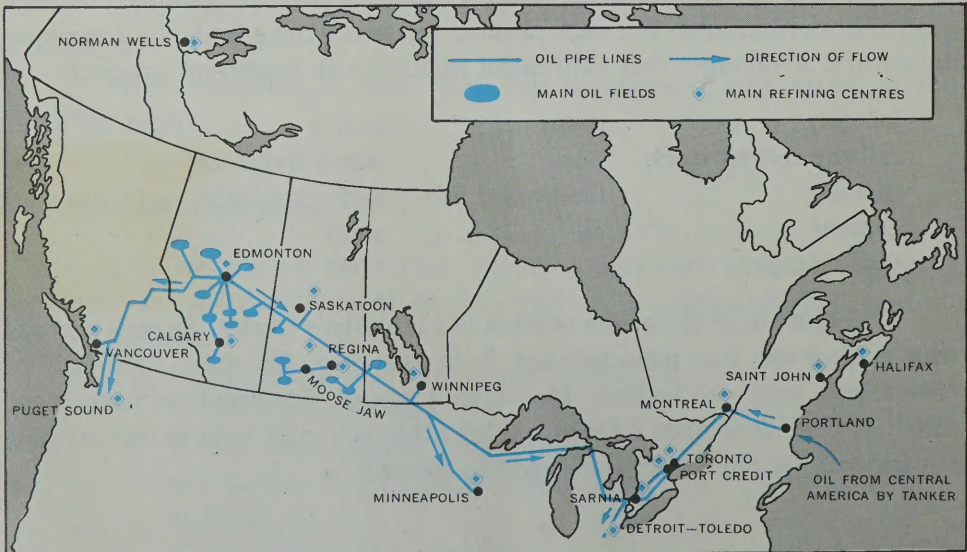
wool

sawn lumber

4. Figure 6-29 shows the sources of Manitoba's wealth. Suggest reasons why agriculture and manufactures form the basis for more than half of Manitoba's total production. In which parts of the province have these activities been developed? Do you think other activities such as forestry and mining may be more fully developed in future?



6-30. Mean annual precipitation.



6-31. Main oil pipelines and refinery centres.

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